

10/563240  
IAP15 Rec'd PCT/PTO 03 JAN 2006

## Article 34 Amendment

and ready for freight and transportation approval, cost estimate etc.

## SUMMARY OF THE INVENTION

5 It is the object of the present invention for a method of calculating and comparing the levels of inventory to a stored set of parameters, triggering shipment and/or call for shipment/orders, automatic ordering of specific inventory and calculation of freight, shipment documentation processing and transportation costs based on the said order being triggered.

10

The invention provides an inventory management system comprising:

an inventory server having a database of inventory products for classifying inventory levels based on predetermined rules comprising at least a critical stock level and a rolling forecast of required stock over a predetermined time period, to

15 enable a product amount data signal to be generated, and output signals generated based on the predetermined rules, the server enabling a supplier or customer to view the output signals over a communication link to facilitate supply or ordering of stock, and to trigger actuation of a request for resupply of stock or stoppage instructions to stop resupply of stock in response to the product position

20 data signal;

a transport server for containing data relating to the transportation of stock to enable transportation costs of stock to be supplied by a potential supplier and/or ordered by a potential customer to be determined so that the total supply and transportation cost of stock can be determined; and

25 a supply module for activation by the server in response to the trigger activation from the server to call for supply of stock from suppliers or fulfil orders submitted by customers and to generate supply documentation for the supply of stock from suppliers or fulfilment of orders from customers.

30 The system of the invention therefore enables an inventory of stock to be maintained and for stock to be replenished so that stock is available for supply to customers. The system also enables customers and suppliers to view the inventory status and for transportation costs to be supplied for adding to the inventory cost to determine the total cost of supply and fulfilment of ordering of stock.

35 In one embodiment the predetermined rules further comprise a minimum stock

- 2a -

level, a current stock committed by single supplier, a multiple supplier commitment level, and wherein the critical stock level is the difference between the current stock committed by a single supplier and the multiple supplier commitment level, and wherein the multiple supplier commitment level is the sum of all the current stock committed by single suppliers.

5 In one embodiment the inventory server provides the output signals in the form of an XML formatted document that is stored on the server.

10 Preferably the communication link comprises the internet.

Preferably the communication link is a secured encrypted communications link.

15 The inventory server and the transport server may be a single server or may be separate individual servers. The supply module may also be part of a single server or of a multiple server system.

20 In one embodiment of the invention the product amount data signal is generated by the subtraction of the forecast and critical stock level data to provide both status buffer data and the stock position data.

Preferably one of the outputs supplied by the inventory server comprises an inventory status and ageing data.

25 In another embodiment one of the outputs comprises a consumption status report comprised of transportation data and inventory forecast data to yield a final consumption status report.

30 In one embodiment of the invention the status buffer data and the critical stock level data are compared to the forecast to produce the product amount signal in the form of an order quantity to trigger activation of the request for resupply of stock.

35 In one embodiment of the invention the inventory server has a master remote server, a main server memory and at least one data storage device, and wherein the master remote server loads data representing the level of forecast inventory required according to stored parameters in the permanent data storage device and

- 2b -

determines the level of forecast inventory required according to data provided by the master remote server or separate processing systems.

Preferably the master remote server compares the level of forecast inventory with

5 the minimum level of inventory required, critical stock level and current stock committed by single supplier data to determine the nature of the trigger activation so that a determination is made as to whether there is excessive stock levels or shortage due to insufficient buffer stock so that triggering actions can be transmitted by the supply module to either a third party processing system or

10 another system connected to the master server for further electronic processing, including reordering and inventory stoppage instructions.

In another embodiment of the invention the product amount data signal is produced by combining the buffer stock data and minimum stock level data to

15 determine whether the level of forecast inventory required data is adequate and, if not, the server supplies a trigger activation to order additional stock from a predetermined group of suppliers.

20 In a further embodiment of the invention, the inventory server in response to the trigger activation creates an order message for supply to the order module which causes the order module to match each order message to each order or part specification number from a specification database and consolidates part numbers and identifying data into a look up file.

25 Preferably the look up file is used by the transport server to determine transportation costs from a database relating to the transportation of stock, and a calculation processor for calculating estimated shipping costs to bring all stocks to be reordered to a particular location.

30 Preferably the ordering module includes a sub-module for updating the look up file to trigger shipment booking and/or stock ordering together with transportation documentation.

The invention provides an inventory management method comprising:

35 maintaining a database of inventory products for classifying inventory levels based on predetermined rules comprising at least a critical stock level and a rolling forecast of required stock over a predetermined time period;

- 2c -

producing a product amount data signal, and output signals based on the predetermined rules;

enabling a supplier or customer to view the output signals over a communication link to facilitate supply or ordering of stock;

5 triggering actuation of a request for resupply of stock or stoppage instructions to stop resupply of stock in response to the product position data signal;

determining transportation costs of stock to be supplied by a potential supplier and/or ordered by a potential customer; and

10 triggering a call for supply of stock from suppliers based on the product amount data signal or fulfilling orders submitted by customers, and generating supply documentation for the supply of stock from suppliers or fulfillment of orders from customers.

15 In one embodiment the predetermined rules further comprise a minimum stock level, a current stock committed by single supplier, a multiple supplier commitment level, and wherein the critical stock level is the difference between the current stock committed by a single supplier and the multiple supplier commitment level, and wherein the multiple supplier commitment level is the sum of all the current stock committed by single suppliers.

20

In one embodiment the output signals are in the form of an XML formatted document that is stored on a server.

25 Preferably the communication link comprises the internet.

Preferably the communication link is a secured encrypted communications link.

30 In one embodiment of the invention the product amount data signal is generated by the subtraction of the forecast and critical stock level data to provide both status buffer data and the stock position data.

35 Preferably one of the outputs supplied by the inventory server comprises an inventory status and ageing data.

In another embodiment one of the outputs comprises a consumption status report comprised of transportation data and inventory forecast data to yield a final

- 2d -

consumption status report.

In one embodiment of the invention the status buffer data and the critical stock level data are compared to the forecast to produce the product amount signal in 5 the form of an order quantity to trigger activation of the request for resupply of stock.

Preferably forecast inventory is compared with the minimum level of inventory required, critical stock level and current stock committed by single supplier data to 10 determine the nature of the trigger activation so that a determination is made as to whether there is excessive stock levels or shortage due to insufficient buffer stock so that triggering actions can be transmitted by the supply module to either a third party processing system or another system connected to the master server for further electronic processing, including reordering and inventory stoppage 15 instructions.

In another embodiment of the invention the product amount data signal is produced by combining the buffer stock data and minimum stock level data to determine whether the level of forecast inventory required data is adequate and, if 20 not, the server supplies a trigger activation to order additional stock from a predetermined group of suppliers.

In a further embodiment of the invention, an order message is created which matches each order message to each order or part specification number from a 25 specification database and consolidates part numbers and identifying data into a look up file.

Preferably the look up file is used to determine transportation costs from a database relating to the transportation of stock, and a calculation processor for calculating estimated shipping costs to bring all stocks to be reordered to a 30 particular location.

Preferably the look up file is updated to trigger shipment booking and/or stock ordering together with transportation documentation.

35

- 2e -

One embodiment of the invention consists of some basic components as follows:

1. Inventory tracking and forecasting module
2. Multiple location visibility of inventory upon trigger/rule activation
3. Electronic ordering of inventory and automatic documentation processing and cost of transportation/freight calculation.

Inventory tracking and forecasting module

The invention has a rule-based system whereby inventory levels are classified according to the following classes:

10

Minimum stock level (MSL)

Critical stock level (CSL)

Current stock committed by single supplier (CSGL)

Multiple supplier commitment level (MSCL)

15

In the first embodiment of the present invention, the system will accept electronic input of data relating to the mentioned forecast data (Minimum, critical stock levels & multiple supplier commitment level), and generate a result or output data based on the following manner;

20

CSGL - MSL = CSL

Where CSL (1) + CSL (2) + CSL (3) = MSCL